

1. Cut-away view of a 3-D image of an epsilon15 phage reconstructed by single particle cryoEM. This image reveals all the molecular components (annotated in different colors) in one of the 12 vertices of the virion responsible for genome packaging and release in addition to the icosahedral capsid shell and the concentric shells of the viral genomes. W. Jiang et al. Nature (2006) 439: 612-6.

2. Complete structure of satellite tobacco mosaic virus, prepared for simulation. The structure includes protein, RNA, water, and ions, and is composed of a total of over one million atoms. Anton Arkhipov.

3. Myosin thick filament model. Muscles contract when myosin motors (green and yellow) tethered to thick filaments walk along nearby actin filaments (not shown). This is triggered by calcium which is detected by light chains (red). Long tails (brown) on the myosin motors form the core of thick filaments. The model shows the relaxed state and derives from a density map (grey) determined by electron microscopy of tarantula filaments. Woodhead JL, et al., Nature, 2005 Aug 25; 436 (7054): 1195-9.

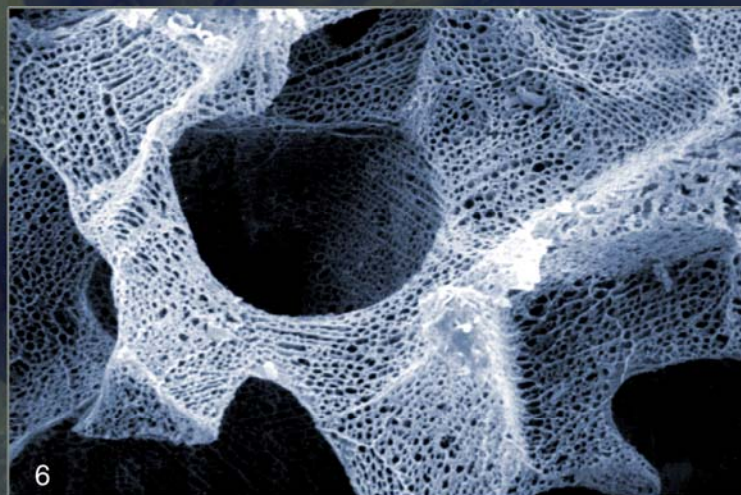
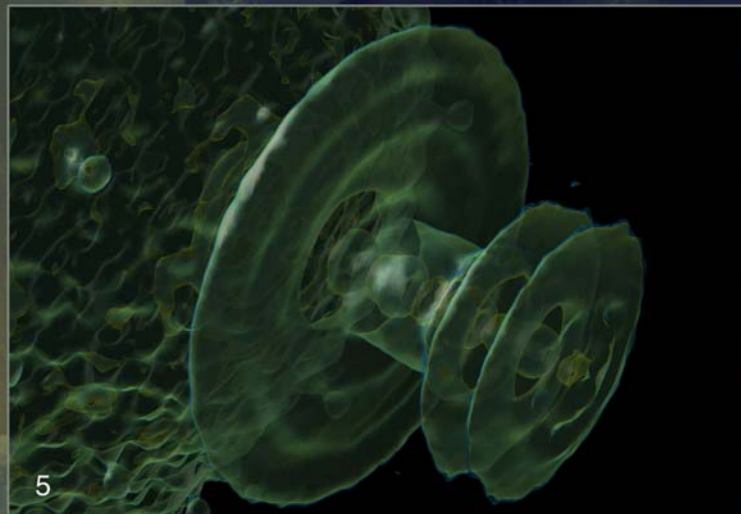
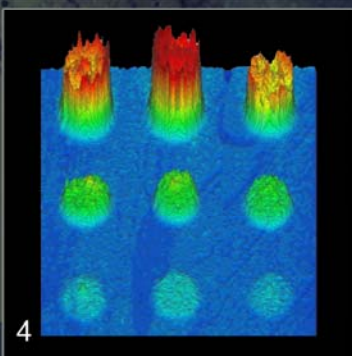
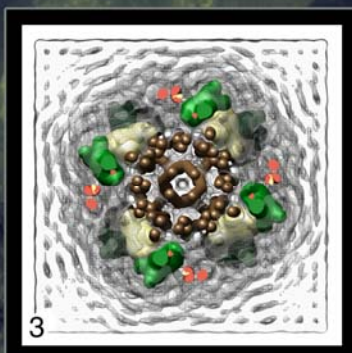
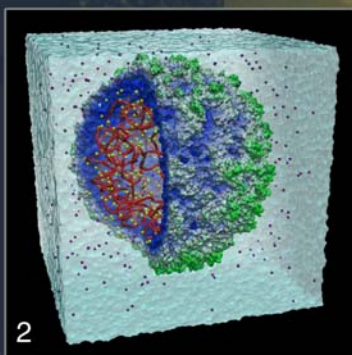
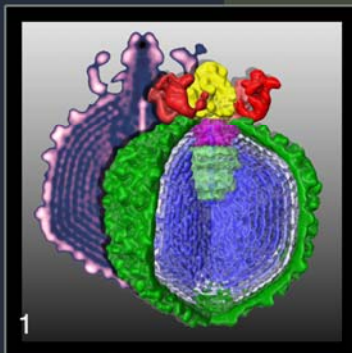
4. Plasmon-controlled Fluorescence for DNA analysis and bioassays. Joseph Lakowicz.

5. Bacteriophage T4 is a large, tailed, double-stranded DNA virus that uses Escherichia coli as a host. The image was made from a density map (22.5 angstrom resolution) obtained by electron cryo-microscopy. It shows the virus head and portal to which the tail connects. Steven McQuinn.

6. Porous tissue regeneration scaffold with optimized pore architecture. Joachim Kohn.

7. Image Guided Therapy aims at improving the surgeon's ability to localize and target diseased tissue, and to monitor and control therapeutic procedures. The ultimate goal is to improve surgical out-comes, decrease patient mortality, reduce surgical complications, shorten hospitalizations, and minimize post-operative care.

In the near future IGT will move to develop an interventional/intra-operative suite equipped with state-of-the-art, integrated, image-guidance technology and instrumentation including high-field interventional MRI, computer-assisted fluoroscopy, and navigational systems that will connect various therapy delivery systems such as surgical tools, interventional radiology instruments, and a complex, MRI-guided focused ultrasound system directed at the non-invasive treatment of tumors. Ferenc Jolesz.



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